REMARKS/ARGUMENTS

Claims 1 through 15 stand rejected under 35 USC Section 103(a) as being unpatentable over U.S. Patent No. 2,315,063 to Lieber (hereinafter "the Lieber patent") in view of U.S. Patent No. 4,708,809 to Davis (hereinafter "the Davis patent").

The Lieber patent, issued in 1941 (from an application filed in 1938) is directed to a class of lubricating oil flow improvers (LOFI) having an aromatic moiety linked to an alkyl radical via a keto group. As noted in applicants' specification, with regard to U.S. Patent No. 1,815,022, this class of LOFIs is considered obsolete, having been long ago supplanted by more effective flow improving materials, primarily fumarate/vinyl acetate copolymers and polymethacrylates. At the time the LOFI materials of the Lieber patent were in use, high molecular weight dispersants had not yet been developed. Modern, more stringent cold temperature lubricating oil performance requirements, and reduced chlorine tolerance, render this early class of LOFI materials even further obsolete. The Lieber patent makes no mention of any use for the disclosed class of materials in lubricating oil compositions other than as a LOFI.

The aromatic moieties of the LOFI of the Lieber patent may be either a mononuclear or polynuclear carbocyclic moiety. The LOFI materials of the Lieber patent may have only two linked aromatic moieties. The Lieber patent does not require any specific ratio between the number of aromatic and aliphatic carbon atoms. The Lieber patent does not suggest that polynuclear carbocycle-based materials provide any improved performance compared to phenyl-based materials, nor does the Lieber patent suggest that materials having three or more linked aromatic groups will provide any performance benefit relative to materials having only two linked aromatic groups. The material of Example 7 of the Lieber patent is not, as suggested in the Office Action, within formula (I) of the present claims as the compound exemplified has only two aromatic moieties.

The Davis patent was cited only for teaching the use of high molecular weight dispersants in lubricating oil compositions (for two-cycle engines), in combination with other conventional additives. Applicants point out that the Davis patent further teaches the use of a "phenolic" compound and defines "phenolic" in a manner that encompasses single and linked, mono- and polynuclear moiety-based materials. The inclusion of these phenolic compounds is described as

providing a reduction in engine piston varnish. The Davis patent does not exemplify any compounds comprising linked aromatic moieties, and does not suggest that such materials would provide any performance advantage.

Thus, neither the Lieber patent nor the Davis patent suggest the unique soot dispersing properties (or any other advantage) of the claimed oligomers over simple phenolic compounds, linked mono-nuclear mononuclear aromatic compounds or dimeric aromatic compounds. Thus, even if one were to consider a combination of the Lieber patent and the Davis patent, one would not be led to use the compositions of the present invention, to the exclusion of other compositions described in the prior art. Further, applicants submit that no such combination of references would be considered unless one had knowledge of applicants own specification. Specifically, as noted above, at the time of the issuance of the Davis patent (and even more so today) the class of LOFI materials described in the Lieber patent was obsolete, and far more effective LOFIs had been developed. It is not enough to state that a combination of previously known components could be made. There must be a suggestion in the prior art that would lead one of ordinary skill to make such a combination. The Davis patent provides no incentive regarding the use of the materials of the Lieber patent as a LOFI (or for any other purpose) in the high molecular weight dispersant-containing combinations described therein. Therefore, one would not be led to make the noted combination (again, absent foreknowledge of the present specification). Such hindsight reconstruction of a claimed invention is clearly improper, and does not establish obviousness under Section 103.

Claims 5, 6, 13 and 14, which require a linkage group other than the keto linkage group invariably required by the Lieber patent, are further distinguishable over the combination of references discussed above.

Claims 1 through 15 stand rejected under 35 USC Section 103(a) as being unpatentable over U.S. Patent No. 2,315,063 to Lieber (hereinafter "the Lieber patent") in view of U.S. Patent No. 3,676,346 to Hu (hereinafter "the Hu patent").

The Hu patent suggests that the use of a sulfurized polymer in combination with a dispersant will provide a sludge handling benefit. It is further disclosed that the sulfurization of a LOFI polymer does not impede the pour point depressing properties thereof, and that a sulfurized

LOFI can be used as the sulfurized polymer. The Hu patent allows for the use of any of the LOFI polymers available including any of alkylated aromatics, fumarate/vinyl acetate copolymers and polymethacrylates. Even at the time of the Hu patent, the alkylated aromatic-based LOFIs were not favored. However, even if one were to select this class of LOFI for use in the compositions of the Hu patent (and applicants again note that there is no suggestion to do so in the Hu patent), one would not be led to the linked, polynuclear aromatic compounds of the invention, to the exclusion of all others. Further, applicants note that, as industry is presently attempting to reduce the amount of sulfur contained in lubricating oil compositions, the teaching of both the Lieber patent (1943) and the Hu patent (1972) would be considered obsolete by the modern formulator and would not be referenced. Thus, again, applicants submit that the combination of the Lieber patent and Hu patent would be made only by one attempting to perform a hindsight reproduction of the presently claimed materials and that such hindsight reconstruction is clearly improper and does not establish obviousness under Section 103. Further, even if one were to make the suggested combination, one would not be led specifically to the compositions now claimed.

As discussed *supra*, Claims 5, 6, 13 and 14, which require a linkage group other than the keto linkage group invariably required by the Lieber patent, are further distinguishable over the combination of references cited in the Office Action.

The data presented in the specification clearly established the improvement in the ability of a lubricating oil to handle carbon black achieved by use, in combination with a high molecular weight dispersant, of the linked aromatic compounds now claimed, compared to compositions containing an equivalent amount of the corresponding non-linked alkylated aromatic compound (see results as shown in Figs 1 and 2). To further demonstrate the unexpected ability of the claimed materials to disperse sludge in lubricating oil compositions, Applicants enclose herewith the Declaration of Antonio Gutierrez, a named inventor of the subject matter of the present application. The data presented in the Declaration demonstrate that the carbon black-dispersing properties of lubricating oil compositions containing a high molecular weight dispersant and an alkylated, linked phenol are actually inferior to those of a lubricating oil composition containing only the high molecular weight dispersant. Each of the non-linked naphthalene used as the comparative example of the Specification and the linked phenol used as the comparative example of the present Declaration are within the scope of the disclosure of the Lieber patent (except for the linkage group). There is nothing in the Lieber patent that would lead one to expect that the

properties of a linked, polycyclic aromatic compound would provide any improved results relative to those of a non-linked polycyclic aromatic or a linked, monocyclic aromatic compound. Thus, even if one were provided the impetus to apply the teaching of the Lieber patent to a modern lubricating oil composition (and applicants again stress that no such motivation is provided), the present invention remains distinguishable, and would not be considered obvious under Section 103.

Based upon the foregoing, applicants submit that the claims of this application distinguish over each cited prior art reference and any combination thereof. Therefore, applicants respectfully request that all rejections presented under Section 103 be withdrawn, and that the above-identified application now be passed to issue.

Respectfully submitted,

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